AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A waveguide light detecting element for detecting multiwavelength-band signal light, comprising:

a semi-insulating semiconductor substrate; and

an optical waveguide layer supported by the semiconductor substrate, said optical waveguide layer including, sequentially laminated from the semiconductor substrate side, a first conductivity type first cladding layer connected to a first electrode, a first conductivity type first optical guide layer, an optical absorbing layer, a second conductivity type second optical guide layer, and a second conductivity type second cladding layer connected to a second electrode, wherein,

when a center wavelength of a first signal light wavelength band, corresponding to a shortest signal light wavelength band is defined as $\lambda 1$, a center wavelength of a second signal light wavelength band is defined as $\lambda 2$ ($\lambda 2>\lambda 1$), and a composition wavelength of a material for each of the first and second cladding layers is defined as λa, composition wavelength, λg, of a material of each of the first and second optical guide layers satisfies $\lambda a<\lambda g<\lambda 1$ so that the first and second optical guide layers are transparent to the first signal light, ~~and~~

when the thickness of each of the first and second optical guide layers, corresponding to an extreme value in which inclination of a sensitivity curve of $\lambda 1$ with respect to a change in the thickness of each of the first and second optical guide layers changes from positive to negative, is defined as d1, and the thickness of each of the first and second optical guide layers, corresponding to an extreme value in which inclination of a sensitivity curve of $\lambda 2$ with respect to the change in the thickness of each of the first and second optical guide layers changes from positive to negative, is defined as d2, the thickness, dg, of the first and second optical guide layers satisfies $0.75d1\leq dg\leq 1.25d2$, and

each of the first and second cladding layers is InP, the composition wavelength λg of each of the first and second optical guide layers is fixed, the composition wavelength of the first and second cladding layers, λa, is $0.92\mu m$, $\lambda 1 = 1.3\ \mu m$, $\lambda 2 = 1.55\ \mu m$, and the thickness, dg, of the first and second optical guide layers satisfies $0.3\mu m\leq dg\leq 0.75\mu m$ with $d1 = 0.4\ \mu m$ and $d2 = 0.6\ \mu m$.

2. (Previously Presented) The waveguide light detecting element according to claim 1, wherein, when the thickness of the optical absorbing layer is defined as da, $0.3\mu m \leq da \leq 0.5\mu m$.

3. (Canceled)

4. (Previously Presented) The waveguide light detecting element according to claim 1, wherein each of the first and second optical guide layers is InGaAsP.

5. (Previously Presented) The waveguide light detecting element according to claim 1, wherein each of the first and second optical guide layers is AlInGaAsP.

6. (Previously Presented) The waveguide light detecting element according to claim 1, wherein each of the first and second optical guide layers is GaInNAs.

7. (Previously Presented) The waveguide light detecting element according to claim 1, including a low refractive index layer of a material lower than the optical absorbing layer in refractive index disposed on side faces of a waveguide.